

## Behavioral and Social Research Program Research Project Grants

Award Mechanisms for Research Project Grants includes the following:

- P01 – Research Program Project
- R01 – Research Project (Traditional)
- R03 – Small Research Grant
- R15 – Academic Research Enhancement Award (AREA)
- R21 – Planning Grant
- R37 – Method to Extend Research in Time (MERIT) Award
- R55 – Shannon Award
- U01 – Cooperative Agreement Research Project Award

**BUT THIS FILE CONTAINS R21, R29, and R37s**

**Grant:** 1R21AG020470-01A2  
**Program Director:** STAHL, SIDNEY M.  
**Principal Investigator:** LI, FUZHONG PHD  
**Title:** Cobblestone Walking for Elder Health  
**Institution:** OREGON RESEARCH INSTITUTE EUGENE, OR  
**Project Period:** 2003/09/30-2005/08/31

Stone-stepping, an activity in which people walk on a fixed, smooth cobblestone surface, is based on fundamental principles of traditional Chinese medicine that also underpin other forms of Chinese health-related activities, such as Tai Chi. Preliminary data based on a pilot study have indicated potential health-related benefits of this stonestepping activity. However, further research with a larger controlled trial is needed to substantiate its health and well-being benefits. The primary aims of the proposed study are, in a 4-month randomized controlled trial, to examine the effects of this novel activity on measures of balance, physical functioning, and health-related quality of life in older adults. One hundred community-dwellers aged 60 and over will be randomly assigned to one of two study conditions: (a) a cobblestone-mat walking group or (b) a wellness education (attention) control group. Participants in the experimental group will engage in a cobblestone-mat walking activity three times per week for 16 weeks. Primary outcome measurements include variables related to balance, physical functioning, and health-related quality of life, to be assessed before and immediately after intervention. A repeated-measures ANOVA procedure will determine whether changes in outcomes take place over the 16-week intervention period. This study is unique because it represents an effort to offer a novel physical intervention to older adults, a population that has received few formal exercise interventions. The results from this study will substantiate preliminary evidence for the efficacy and feasibility of this novel physical activity in positively influencing selected health outcomes among the elderly. In addition, results are likely to provide support for the development of an added, low-cost, innovative exercise modality suitable for community setting to reduce or delay frailty in the older population.

**Grant:** 5R29AG014110-05  
**Program Director:** PATMIOS, GEORGEANNE  
**Principal Investigator:** MC GARRY, KATHLEEN M PHD  
**Title:** AGING AND INTERGENERATIONAL ASSISTANCE WITHIN FAMILIES  
**Institution:** NATIONAL BUREAU OF ECONOMIC RESEARCH CAMBRIDGE, MA  
**Project Period:** 1998/06/01-2005/03/31

**DESCRIPTION:** The research will investigate the flows of financial assistance between older parents and their adult children and the relationship of these flows to assistance provided by the Supplemental Security Income Program (SSI). It will examine three dimensions of intergenerational assistance: inter vivos transfers and bequests from parents to children: cash transfers from children to parents; and government assistance to the elderly. This study will provide a complete description of financial flows with analyses conducted at several levels ranging from general descriptions of the patterns in the data to structural model based estimation. A theoretical model of transfer behavior will be developed that treats inter vivos transfers and bequests as part of the same decision making process, but that allows the patterns for the two behaviors to differ. The econometric specifications employed in this estimation will take into account unobserved family differences in generosity, and unobserved differences particular to a parent-child pair. A dynamic structural model will be proposed that combines inter vivos transfers and bequests. An important component of this research will be the analysis of the interaction of familial assistance and government transfer programs. The extent to which transfers through the SSI program replace, or crowd out, familial assistance will be estimated. This result will be of use to policy makers in determining the redistributive effects of government programs. The empirical analyses will be based on the Health and Retirement Survey (HRS) and the Asset and Health Dynamics Survey (AHEAD). Together they provide a complete description of transfers over the latter portion of the life cycle. Four waves of each survey will be used to focus on the dynamic aspects of behavior, examining how transfers adjust to changes in the financial status of potential donors and recipients.

**Grant:** 5R37AG005739-18  
**Program Director:** ELIAS, JEFFREY W.  
**Principal Investigator:** BALL, KARLENE K PHD PSYCHOLOGY  
**Title:** IMPROVEMENT OF VISUAL PROCESSING IN OLDER ADULTS  
**Institution:** UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL  
**Project Period:** 1985/08/01-2005/01/31

Many older adults are subject to declines in their ability to function effectively and independently. In particular, sensory, perceptual, and cognitive functions may deteriorate in later life for some individuals, and it is widely believed that these deficits contribute to a decline in the ability to perform everyday activities. While much is now known about cognitive and sensory aging, relatively little is known about the functional consequences of age differences for everyday tasks. Furthermore, relatively little research has been done to aid in the development of interventions designed to prevent, delay, or reverse the disabilities which affect older adults. Past research evaluating the relationships between visual function, attentional function, cognitive function and driving crashes has determined that the Useful Field of View, a composite measure of visual attention, is predictive of the crash frequencies of older drivers, as well as amenable to intervention. The objectives of this project will extend previous work in three areas; 1) Studies will further explore the mechanisms underlying UFOV reduction, and training. These studies will also permit a test of several current competing theories of cognitive aging, and data will be analyzed to determine whether different mechanisms underlie observed deficits within different individuals. For example, based on existing theoretical models, expansion of the UFOV could be the result of a generalized increase in processing speed, an improved ability to switch attention, or improved inhibitory mechanisms. An individual differences approach will be used to determine why training is effective for different people, the specificity of improvements across sensory modalities, and the relationship of improved attentional function to higher cognitive skills such as working memory. 2) Measuring functional visual abilities in the clinic is becoming increasingly important in geriatric optometry because of the concern for predicting which older patients are at risk for functional problems in everyday activities. Previous work has shown that individuals with identical visual sensitivities can have dramatically different abilities on measures such as the UFOV, which is predictive of driving problems. Studies will further explore the contribution of visual function to higher order visual information processing levels by systematically evaluating the impact of degraded visual input on higher level tasks, such as the UFOV, within individuals of known attentional and cognitive ability. This will allow a determination of the interactions between visual function, attention, and overall mental status on functional performance measures. 3) Further studies will be carried out to explore the relationship between sensory and cognitive processes and functional outcome measures such as driving and accidental injuries. We propose to evaluate specific hypotheses concerning the mechanisms underlying difficulty with specific driving tasks (such as turning left) as well as evaluating transfer of training directly to these specific maneuvers. Such studies, aimed at improving visual/cognitive performance in older adults, should further our understanding of basic visual, attentional, and cognitive processes as well as advance our knowledge of the aging process.

**Grant:** 5R37AG008235-13  
**Program Director:** ELIAS, JEFFREY W.  
**Principal Investigator:** DIXON, ROGER A MA  
**Title:** Longitudinal Study of Cognitive Aging  
**Institution:** UNIVERSITY OF ALBERTA EDMONTON, AB  
**Project Period:** 1989/08/01-2007/07/31

DESCRIPTION (provided by applicant): In the Victoria Longitudinal Study (VLS), we conduct a series of cross-sectional and longitudinal studies pertaining to the description and explanation of changes in cognitive performance in late adulthood. The research derives from the perspective that the magnitude and rate of late-life changes in memory performance depend substantially on individual differences in such underlying factors as (a) cognitive ability and resource components, (b) metacognitive and compensatory knowledge and implementation, (c) selected health, biomedical, sensory, neuropsychological, and physiological conditions, and (d) lifestyle, activity, and demographic background indicators. The principal objective is to continue an ongoing large-scale longitudinal investigation, thereby enhancing a unique and increasingly rich data set on human aging. The VLS is designed as a longitudinal sequential study. Three independent samples of 55-85-year old adults are recruited at six-year intervals. Each sample is re-tested at three-year longitudinal intervals. To date, Sample 1 (original n=484; average return rate over 70%) has been tested five times over 12 years (start years 1986, 1989, 1992, 1995, 1999). The sixth wave occurs in 2002. Sample 2 (original n=530; average return rate over 80%) has been tested three times over six years (start years 1993, 1996, 1999). The fourth (late 2002) and fifth waves (2005) occur in this research period. Sample 3 (expected n=530) is presently being tested (current n=300). The second wave begins in 2004. Several comparison samples have been developed in recent years. Approximately 10 hours of data are collected per participant at each occasion. In sum, the proposed research is designed to examine the extent and trajectories of aging-related cognitive and memory changes, as influenced by (a) patterns of differential decline in theoretically derived classes of influencing cognitive components, and (b) conditions representing selected physiological, health, and lifestyle characteristics.

**Grant:** 3R37AG019905-02S1

**Program Director:** PATMIOS, GEORGEANNE

**Principal Investigator:** FRIED, LINDA P MD INTERNAL MED:INTERNAL  
MEDICINE-UNSPEC

**Title:** Pathogenesis of physical disability in Aging women

**Institution:** JOHNS HOPKINS UNIVERSITY BALTIMORE, MD

**Project Period:** 2001/09/30-2006/08/31

DESCRIPTION (provided by applicant): Disability in older adults is a frequent, adverse health outcome associated with aging. Population-based and clinical research indicates that disability in older adults is strongly associated with chronic diseases, both singly and in combination, and modified by a host of factors at the individual level. However, there is increasing evidence to suggest that pathogenic factors beyond chronic diseases may play significant roles in the development or progression of disability, as well as being associated with mortality in older adults. This study proposes to evaluate the role of three potential contributors to the pathogenesis of disability: inflammation, hormones, micronutrient deficiencies, singly, in combination, and in relation to existing diseases, impairments and frailty. We propose to evaluate these questions through analysis of already-collected data in the Women's Health and Aging Study (WHAS) I and its ancillary studies, the WHAS II and a study that collected blood, analyzed many measures and stored plasma and serum. WHAS I and II provide data on the 1/3 most disabled and the 2/3's least disabled older women living in the community, respectively. Older women are substantially more likely than older men to live disabled or dependent, and to require long-term care due to this. This study proposes to answer the following research aims using merged data sets that span the full spectrum of function in older women: a) to establish population norms and rates of change for pathogenic biomediators; b) to determine the degree to which these biomarkers explain disability status; c) to evaluate longitudinally the independent and interactive contributions of pathogenic biomediators to disability, over and above that of disease, and the potential role of frailty as a modifier of these relationships; d) to develop screening nomograms for clinical identification of those at high risk of severe disability and assess potential impact of interventions needed to meaningfully delay such progression; and e) produce a Monograph based on WHAS results that describes evidence for a causal pathway to disability and its risk factors. This proposed research is one of three studies that comprise an Interactive Research Project Grant designed to conduct next-generation analyses of the Women's Health and Aging Studies. These 3 projects will explore a range of biological, social and environmental risk factors for disability in older women. These 3 levels of evaluation are anticipated, singly and together, to provide substantive new understanding of opportunities for effective prevention and treatment of disability in older women.

**Grant:** 5R37AG019905-03

**Program Director:** PATMIOS, GEORGEANNE

**Principal Investigator:** FRIED, LINDA P MD INTERNAL MED:INTERNAL  
MEDICINE-UNSPEC

**Title:** Pathogenesis of physical disability in Aging women

**Institution:** JOHNS HOPKINS UNIVERSITY BALTIMORE, MD

**Project Period:** 2001/09/30-2006/08/31

DESCRIPTION (provided by applicant): Disability in older adults is a frequent, adverse health outcome associated with aging. Population-based and clinical research indicates that disability in older adults is strongly associated with chronic diseases, both singly and in combination, and modified by a host of factors at the individual level. However, there is increasing evidence to suggest that pathogenic factors beyond chronic diseases may play significant roles in the development or progression of disability, as well as being associated with mortality in older adults. This study proposes to evaluate the role of three potential contributors to the pathogenesis of disability: inflammation, hormones, micronutrient deficiencies, singly, in combination, and in relation to existing diseases, impairments and frailty. We propose to evaluate these questions through analysis of already-collected data in the Women's Health and Aging Study (WHAS) I and its ancillary studies, the WHAS II and a study that collected blood, analyzed many measures and stored plasma and serum. WHAS I and II provide data on the 1/3 most disabled and the 2/3's least disabled older women living in the community, respectively. Older women are substantially more likely than older men to live disabled or dependent, and to require long-term care due to this. This study proposes to answer the following research aims using merged data sets that span the full spectrum of function in older women: a) to establish population norms and rates of change for pathogenic biomediators; b) to determine the degree to which these biomarkers explain disability status; c) to evaluate longitudinally the independent and interactive contributions of pathogenic biomediators to disability, over and above that of disease, and the potential role of frailty as a modifier of these relationships; d) to develop screening nomograms for clinical identification of those at high risk of severe disability and assess potential impact of interventions needed to meaningfully delay such progression; and e) produce a Monograph based on WHAS results that describes evidence for a causal pathway to disability and its risk factors. This proposed research is one of three studies that comprise an Interactive Research Project Grant designed to conduct next-generation analyses of the Women's Health and Aging Studies. These 3 projects will explore a range of biological, social and environmental risk factors for disability in older women. These 3 levels of evaluation are anticipated, singly and together, to provide substantive new understanding of opportunities for effective prevention and treatment of disability in older women.

**Grant:** 5R37AG004306-18  
**Program Director:** ELIAS, JEFFREY W.  
**Principal Investigator:** HASHER, LYNN A AB  
**Title:** Age, Inhibition, and the contents of working memory  
**Institution:** UNIVERSITY OF TORONTO TORONTO, ON  
**Project Period:** 1985/07/01-2007/07/31

DESCRIPTION (adapted from investigator's abstract): The research explores age similarities and differences in control over thought and action on the assumption that basic attentional mechanisms that control the contents of working memory play a major role in determining high level cognition. The work evaluates a theoretical model (e.g., Hasher, Zacks & May, in press) that proposes that the critical attentional mechanisms involved in inhibiting irrelevant or no longer relevant thoughts and actions are, on average, less efficient in older than younger adults. Two broad issues are at the center of the present series of studies: (1) age related differences in inhibitory and possible similarities in noninhibitory control processes that determine the contents of working memory; (2) the consequences for retrieval of age differences in control over the momentary contents of working memory. Age differences in retrieval are expected to be larger for older adults than for younger adults because of reductions in inhibitory control over the contents of working memory. This will create more "cluttered" bundles of information in memory and the clutter, comprised of relevant target information, along with irrelevant distraction, will either decrease the chances of finding a target in memory or slow access greatly. Several experiments address these predictions and go beyond to establish the existence of organizational devices that can (a) reduce clutter and so (b) diminish the competition at retrieval between relevant and irrelevant information that is otherwise present for those with reduced inhibitory control over the contents of working memory. The use of such organizational devices should help to reduce memory lapses in older adults. Recent work suggests the existence of at least one noninhibitory process that may help to limit clutter in working memory: the semantic context in which individual words occur. It is possible, in contrast to some views of language processing, that meaning activation is quite narrow in natural language situations such as reading. The prediction pursued here is that younger and older adults will not differ in their ability to use this noninhibitory route to narrow meaning activation and so to control the contents of working memory. Findings from this line of work will help to establish boundary conditions for the role of inhibitory processes in controlling thought and action and they might help to foster the development of environmental conditions that would enable older adults to maintain high levels of cognitive functioning in their chosen environment.



**Grant:** 5R37AG013148-08

**Program Director:** ELIAS, JEFFREY W.

**Principal Investigator:** HERTZOG, CHRISTOPHER K  
PHD GEN/EXP  
PSYCH:GEN/EXPER PSYCHOL-  
UNSPEC

**Title:** AGING, METAMEMORY, AND STRATEGY USE DURING LEARNING

**Institution:** GEORGIA INSTITUTE OF TECHNOLOGY ATLANTA, GA

**Project Period:** 1995/07/25-2004/06/30

DESCRIPTION (adapted from investigator's abstract): Four areas of research are proposed that systematically evaluate age-related differences in associative learning within a metacognitive framework. A central assumption of this framework is that people actively participate in learning new material by (1) utilizing their knowledge about cognitively demanding tasks to select rehearsal strategies, (2) monitoring on-going learning and performance, and (3) utilizing such monitoring to regulate control processes that govern learning and performance. Our long-term objectives include discovering how each of these aspects of self-directed learning influences the rate of learning and age differences in learning. The proposed research involves four separate areas of effort. In general, the proposed experiments involve the use of paired-associate learning and recall to study metacognition, strategies, and learning. Area 1 represents a critical step toward implementing knowledge about aging, metacognition, and strategy use gained in the last funding cycle in a new and unique training program for older adults that simultaneously restructures negative beliefs about age and learning, trains relevant strategies for learning, and trains the use of self-testing (a practical method for using monitoring to guide study) during learning. Area 2 builds on work completed or in progress indicating age-related sparing of the ability to monitor the cognitive system. The investigators focus on factors that influence both relative and absolute accuracy of monitoring, and evaluate age differences in spontaneous (uninstructed) strategy use. Area 3 directs attention to the nature of mediational strategies used during associative learning, extending work with new methods for measuring strategy self-reports developed in the last funded cycle to evaluate age differences in spontaneous (uninstructed) strategy use. Area 4 evaluates the utilization of monitoring to guide self-paced study of paired-associates, in part through the creation of new metacognitive judgements that should help to explain age differences already identified in the utilization of monitoring. Outcomes obtained from all four areas have important theoretical implications for age differences in associative learning and will also provide valuable information on how to construct training and interventions programs to help older adults optimize learning in everyday situations.

**Grant:** 3R37AG011761-10S1  
**Program Director:** SHRESTHA, LAURA B.  
**Principal Investigator:** LEE, RONALD D PHD SOC SC/REL  
DI:ECONOMICS, OTHER  
**Title:** ECONOMIC DEMOGRAPHY OF INTER AGE TRANSFERS  
**Institution:** UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA  
**Project Period:** 1994/04/20-2005/03/31

Abstract Text Not Available

**Grant:** 5R37AG011761-10  
**Program Director:** SHRESTHA, LAURA B.  
**Principal Investigator:** LEE, RONALD D. PHD SOC SC/REL  
DI:ECONOMICS, OTHER  
**Title:** ECONOMIC DEMOGRAPHY OF INTER AGE TRANSFERS  
**Institution:** UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA  
**Project Period:** 1994/04/20-2005/03/31

Resources are reallocated across age and over time for many reasons, including the need to provide for childhood and old age; impatience to consume; the interest rate incentive for waiting to consume; the desire to leave bequests; the wish to hedge against risk; the desire to invest in children; the ability of parents to appropriate the labor services of their children; and the uncertainty of survival. Aggregate reallocations across age have never been studied in a comprehensive way, theoretically or empirically; this project aims to do so, building on work in mathematical demography, aging, economic demography, and overlapping generation models. The project will show that there are only four general types of age reallocation system, of which only three types appear important: capital accumulation, credit transactions, and interage transfers. Properties of each type of system will be studied. Each system generates average age specific wealth, the difference between the present value of expected future allocations into the system and receipts from it. However, when averaged over the population as a whole, aggregate credit must be zero, and the total societal demand for wealth,  $W$ , must be met by total holdings of capital,  $K$ , and transfer wealth,  $T$ . Each type of reallocation takes place through three channels: the family, the market, and the public sector. The project uses this framework to integrate selected themes in the literature including the demography of pension systems, overlapping generation models, economic-demography growth models with age structured populations, life cycle savings, bequest theories of savings, consequences of population aging, generational accounting, optimal population growth rates, public sector externalities to childbearing, and effects of demographic change on aggregate saving. Guided by the formal analysis, an accounting framework for measuring these interage allocations will be developed. It will be used to describe and summarize transfers, capital formation, and credit transactions through the family, the public sector and financial markets for the U.S. in various time periods, based mainly on the CES, and for several Third World populations, based on MFLS2 and Living Standards Surveys. Using a synthetic cohort method under steady state assumptions, these estimates reveal patterns of reallocation across ages; provide a decomposition of total age specific and societal wealth; provide comparative static estimates of the effects of population aging from low fertility or from low mortality; indicate whether the net direction of reallocations is upwards or downwards by age for  $W$  and each form of  $T$ ; and provide other descriptive measures of theoretical and policy interest. Dropping the steady state assumptions, additional empirical analyses develop longitudinal estimates of reallocations. Other work examines the consequences of dynamic (as opposed to comparative static) demographic change operating through the reallocation systems, and calculates probability distributions for the impact of future demographic change in the US on taxes or benefits for public sector transfers.

**Grant:** 5R37AG017766-04

**Program Director:** ELIAS, JEFFREY W.

**Principal Investigator:** LEVENSON, ROBERT W PHD GEN/EXP  
PSYCH:GEN/EXPER PSYCHOL-  
UNSPEC

**Title:** EMOTION AND AGE--REACTION, REGULATION AND UNDERSTANDING

**Institution:** UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA

**Project Period:** 2000/08/01-2005/06/30

Emotion is a prominent feature of life, increasingly thought to play a central role throughout the life-span in a wide range of human processes. Whereas losses are seen in many psychological and physical domains in old age, emotion may be an area of functioning that is relatively spared. Learning and experience play a critical role in many aspects of emotion, thus it is conceivable that actual gains may be seen in old age. This proposal requests support for a series of studies in which three of the most fundamental aspects of emotion--emotional reaction, emotional regulation, and emotional understanding--are studied cross-sectionally in samples of young, middle-age, and elderly individuals and longitudinally in samples of middle-aged and older individuals who will have been studied three times over a ten-year period. The proposed studies are characterized by a multi-method approach in which subjective, expressive, and physiological aspects of both positive and negative emotions are considered. Although all studies are conducted in a laboratory setting, both naturalistic and experimentally manipulated behaviors are studied. The work attempts to disambiguate several issues in the literature on emotion and age. By studying relatively non-emotional tasks (e.g., isometric exercise) and highly emotional tasks, it should be possible to separate age differences in emotional reactivity from possible age differences in non-emotional reactivity. By instructing subjects to regulate their emotions in different ways (suppress and amplify using antecedent focused, response-focused, and non-directed strategies), we will be able to determine if the capacity to control emotion increases in late life. By using an empathic accuracy task with high ecological validity and objective accuracy criteria, it should be possible to determine whether there are actual changes in one important aspect of emotional understanding--the ability to know what others are feeling--with age. By studying emotion in vivo in a longitudinal sample, we should learn whether age differences in emotional reaction and regulation previously observed in cross-sectional comparisons are also reflected within individuals over time. Finally, using the longitudinal data it should be possible to test the notion that gender differences, which are quite large in the realm of emotion early in life, diminish with age.

**Grant:** 3R37AG017766-04S1

**Program Director:** ELIAS, JEFFREY W.

**Principal Investigator:** LEVENSON, ROBERT W. PHD GEN/EXP  
PSYCH:GEN/EXPER PSYCHOL-  
UNSPEC

**Title:** EMOTION AND AGE--REACTION, REGULATION AND UNDERSTANDING

**Institution:** UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA

**Project Period:** 2000/08/01-2005/06/30

Abstract Text Not Available

**Grant:** 3R37AG017766-04S2

**Program Director:** ELIAS, JEFFREY W.

**Principal Investigator:** LEVENSON, ROBERT W. PHD GEN/EXP  
PSYCH:GEN/EXPER PSYCHOL-  
UNSPEC

**Title:** EMOTION AND AGE--REACTION, REGULATION AND UNDERSTANDING

**Institution:** UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA

**Project Period:** 2000/08/01-2005/06/30

Abstract Text Not Available

**Grant:** 5R37AG013196-08  
**Program Director:** PATMIOS, GEORGEANNE  
**Principal Investigator:** MARMOT, MICHAEL G MBBS  
**Title:** CHANGES IN HEALTH: SOCIO-ECONOMIC STATUS AND PATHWAYS  
**Institution:** U OF L UNIVERSITY COLLEGE LONDON LONDON,  
**Project Period:** 1996/04/01-2004/06/30

DESCRIPTION (adapted from investigator's abstract): The Whitehall II study of 10,308 male and female civil servants aged 35-55 years at entry (1985-1988), was established to examine the role of specific psychosocial, lifestyle, biochemical and physiological factors as possible explanations of these inequalities. True age related changes in these exposures, or cumulative exposure measured longitudinally, are hypothesized to predict changes in SES differences in health with age. At the 10-year follow up of the cohort, NIA support funded collection of data to repeat outcome measures of health functioning, cognitive functioning, components of the metabolic syndrome and ApoE genotyping. This application requests funding to analyze the data collected to date and to contribute to specific elements of the 15-year follow-up of the cohort. This funding will enable the investigators to accumulate more endpoints and track health functioning into older age, relate them to early life and mid-life exposures, and thereby allow us to establish psychosocial and biological pathways of disease and health inequalities. The aims of the application are: (1) To describe and explain patterns of change with age in health status in relation to SES; (2) To determine if the gradient in health functioning differs from pre-retirement to retirement; (3) To examine the relationship between SES and change in cognitive function with age; (4) To investigate specific biological pathways linking SES by examining the causes and consequences of their change with age. The Whitehall II study is uniquely poised to address these questions, offering: civil service grade as an excellent measure of SES; longitudinal design with participants comparatively young at entry allowing the detection of antecedents of change; repeated measures of exposures; a wide range of exposure data; substantial power to detect age-related change, and its interaction with SES; wide range of health outcomes including health and cognitive functioning, components of the metabolic syndrome, mortality, non-fatal diagnoses and sickness absence.

**Grant:** 5R37AG011624-10  
**Program Director:** PATMIOS, GEORGEANNE  
**Principal Investigator:** MOR, VINCENT PHD OTHER AREAS  
**Title:** DO GOOD NURSING HOMES ACHIEVE GOOD OUTCOMES?  
**Institution:** BROWN UNIVERSITY PROVIDENCE, RI  
**Project Period:** 1994/07/01-2004/06/30

The proposed project relies upon a combination of primary and secondary data sources assembled at the facility and resident level to test the proposition that residents of nursing homes with formalized, protocol driven approaches to caring for the physiological needs of residents will experience reduced rates of pressure ulcers and lower extremity contractures compared with homes that allow autonomy and clinical decision making discretion but that the opposite relationship will be observed for psychosocial outcomes, such as well-being and distressed mood. A sample of 360 facilities, stratified by ownership, size and urban location will be drawn from the 6 states participating in HCFA's Multi-State Case-Mix Demonstration project. MDS+ data available longitudinally (at 6 and 12 months post-baseline) in computerized form for all residents of homes will be obtained for participating homes as will the most recent MMACS data. Directors of nursing and a unit charge nurse in all homes will be interviewed by telephone to characterize the internal management structure, lines of communication and responses to changes in the environment as well as about the nursing care processes in place to guide staff behavior viz. care planning, service delivery and interaction with residents. The Area Resource File (ARF) will be used to describe the health care and resource environment in which the facility is situated. These four sources of data will be merged and analyses undertaken with the resident as the unit of analysis. We will ascertain whether the data are consistent with our hypothesis that, contingent upon the type of resident outcome (e.g. physiologic vs. psychologic), the relative importance of the type of control and communication strategies in place predict the two types of resident outcome will vary. Further, we will explore the various aspects of nursing home functioning and operation, including staff turnover and other indicators of leadership, and their relationship to whether homes achieve good outcomes in several, or only one, resident outcome domain. This latter exploratory data analysis step is crucial to derive from the theoretical results insights about how to intervene in a nursing home to improve the chance of achieving positive outcomes.



**Grant:** 5R37AG013993-09  
**Program Director:** ELIAS, JEFFREY W.  
**Principal Investigator:** RUBINSTEIN, ROBERT L. MA ANTHROPOLOGY  
**Title:** BEREAVEMENT IN LONG TERM CARE  
**Institution:** UNIVERSITY OF MARYLAND BALT PROF BALTIMORE, MD  
SCHOOL  
**Project Period:** 1996/09/01-2004/08/31

**DESCRIPTION:** The major aim of the proposed research is to examine how the topic and event of death are understood and acted upon in four long-term care institutions. There has been very little work on the social construction of death in long-term care institutions. Specific aims of the proposed research include the following: 1) assess the effects of distinctive cultural and religious backgrounds of the LTC settings on the treatment and construction of death; 2) examine the institutional organization, framework, and both direct and de facto philosophies concerning death; 3) examine the division of labor among staff and family concerning death-work; 4) investigate the role of death in the daily life of the focal institutions; and 5) assess the mental health effects of current institutional practices on residents, staff and family. Research will occur sequentially in four LTC settings representing distinctive ethnicities and religions (Jewish-American; African-American, primarily Protestant; European American, primarily Irish Catholic, and European American, primarily northern-European Methodist). The methods and analysis will be ethnographic and qualitative in nature, as appropriate for the goals of the study, the research settings, and the level of knowledge development in this area. Consequently, methods will involve in-depth, key informant interviewing; participant observation of activities around death and dying; and case studies.

**Grant:** 5R37AG012394-09  
**Program Director:** PATMIOS, GEORGEANNE  
**Principal Investigator:** SMITH, JAMES P BS  
**Title:** WEALTH DISPARITIES AMONG MATURE & OLDER ADULTS  
**Institution:** RAND CORPORATION SANTA MONICA, CA  
**Project Period:** 1995/04/05-2005/03/31

This MERIT renewal will support Dr. James P. Smith in building upon and extending the project's original four specific aims: 1) to describe patterns of asset accumulation among middle aged and older American households; 2) to examine trajectories in the components of household wealth; 3) to document racial and ethnic wealth disparities, and 4) to isolate some behaviors that may account for these large wealth differences among American households. In the proposed research plan, Dr. Smith will build upon and extend the research accomplished during the previous period of support. He proposes to: continue methodological research on quality of measurement in the major aging household surveys of HRS, AHEAD and PSID; extend his focus on the impact of health on household income and wealth to an investigation of the pathway from economic resources to individual health outcomes; extend his research on racial disparities in wealth and health by looking at savings behavior as opposed only to wealth levels; and examine the motivations for household wealth accumulation and savings behavior.

**Grant:** 5R37AG018444-04  
**Program Director:** SHRESTHA, LAURA B.  
**Principal Investigator:** VAUPEL, JAMES W MOTH OTHER AREAS  
**Title:** MORTALITY-SURFACE ANALYSIS OF U.S. AND GERMAN SURVIVAL  
**Institution:** DUKE UNIVERSITY DURHAM, NC  
**Project Period:** 2000/08/15-2004/06/30

DESCRIPTION (Adapted from applicant's abstract): We propose to compile and make available data on mortality surfaces over age and time for the United States, for regional and black and white sub-populations not the United States, for East and West Germany and for 15 other countries. Furthermore, we will develop and test innovative demographic methods for modeling mortality surfaces. The data and methods will be useful to many researchers interested in analyzing questions concerning mortality dynamics and comparisons. We will illustrate this by using the data and methods for modeling mortality surfaces. These data and methods will be useful to many researchers interested in analyzing questions concerning mortality dynamics and comparisons. We will illustrate this by using the data and methods to shed light on two demographic puzzles, one concerning the United States and the other concerning Germany. Although death rates in the U.S. are high before age 65, after this age and especially after age 80 people in the United States survive longer than people in Western Europe and Japan. Many factors may contribute to the U.S. advantage; we propose to study three. In particular, we will use mortality-surface data and methods to analyze the hypothesis that health immigrants contribute to the mortality advantage. We will test whether high death rates at younger ages may lower death rates at older ages. Finally, and perhaps most importantly, we will analyze the hypothesis that the Medicare system lowers U.S. mortality at older ages. The German puzzle pertains to the effects of reunification in 1990. Death rates in East Germany fell so rapidly after 1990 that much of the West Germany mortality advantage was eliminated. Improvements were particularly dramatic at oldest-old ages. The narrowing of the mortality gap between East and West Germany began, however, several years before reunification. Hence it is not clear how much the effects of reunification vs. the effects of other factors account for the change: we will use mortality-surface data and methods to analyze this question.

**Grant:** 5R37AG004517-20  
**Program Director:** ELIAS, JEFFREY W.  
**Principal Investigator:** WINGFIELD, ARTHUR PHD  
**Title:** Age and Decision Strategies in Running Memory for Speech  
**Institution:** BRANDEIS UNIVERSITY WALTHAM, MA  
**Project Period:** 1984/04/01-2007/03/31

**DESCRIPTION:** Ordinary conversational speech arrives very rapidly, typically averaging between 140 to 180 words per minute. From this acoustically complex and often poorly articulated speech stream the listener must rapidly segment the signal into words, extract the linguistic structure and semantic content, and then internally organize this information for comprehension and later recall. The objective of this proposal is to study rapid speech processing and memory in elderly adults. At the theoretical level, the investigators wish to understand how spoken language comprehension and memory operate within known age-related changes in auditory processing efficiency and transient memory capacity. The program has three interleaved components. The first will be to use the technique of self-paced listening to investigate elderly adults' spontaneous resource allocation strategies while listening to speech. This component will include the use of speech rate manipulations to further study the interaction between speech content, and age-related changes in processing speed, on speech comprehension and memory. The second component will examine the ways in which young and elderly adults use the intonation and stress patterns of natural speech to facilitate the structural analysis and comprehension of the speech input. The final component will use a technique of whole-word gating to explore the nature of the boundary conditions that operate on the effective use of linguistic context in word recognition in meaningful speech. Underlying this research is a question of major theoretical importance, and practical significance. This question is the degree to which time-allocation strategies, and the use of linguistic context in speech processing, represent flexibly deployable operations or whether they represent fixed modes of functioning in the aging cognitive system.

**Grant:** 5R37AG012713-08  
**Program Director:** ELIAS, JEFFREY W.  
**Principal Investigator:** YESAVAGE, JEROME A BA  
**Title:** Age-Related Longitudinal Changes in Aviator Performance  
**Institution:** STANFORD UNIVERSITY STANFORD, CA  
**Project Period:** 1995/09/10-2006/06/30

DESCRIPTION (provided by applicant): We will follow a group of over 200 aviators annually for up to 7 years in an accelerated longitudinal study design, and will test the following hypotheses:  
Hypothesis 1: Overall Effects of Age on Aviation Performance in Pilots Aged 50 to 75. We plan to test the hypothesis that there are significant age-related changes in flight simulator performance among aviators over the age range of 50 to 75 years, and that rate of change is greater for individuals over a critical age than under that age.

Hypothesis 2a: Moderators of Change in Aviation Performance in Pilots Aged 50 to 75. We hypothesize that age-related rate of change in aviation performance in pilots aged 50 to 75 will vary across individuals and will depend on flight experience, cognitive processing speed and a genetic measure, all assessed at baseline (Time 1).

Hypothesis 2b: Mediators of Change in Aviation Performance in Pilots Aged 50 to 75. We hypothesize that rate of change in cognitive processing speed over time may account for some of the individual differences in rate of change in flight simulator performance in pilots aged 50 to 75. In our current work, preliminary analyses indicate that aviators above the age of 54 appeared to be at increased risk for decline in overall performance; although age explained only 20 percent of the variance. We also found, in a preliminary manner, that flight experience, change in cognitive processing speed, and a genetic factor may influence rate of change in these aviators. To better understand in whom and why change occurs we propose: to continue to follow aviators for a longer period so that individual trajectories will be more reliably assessed; and to test our second set of hypotheses in terms of "moderators" and "mediators" of change. In this continuation application, we propose: 1) to continue collection of annual data on a streamlined version of the cognitive measures; 2) to extend the follow-up of our current cohort of 144 aviators from the present maximum of 3 years to as long as 7 years per subject; 3) to collect new annual data on simulator performance involving Instrument Flight Rules (IFR) procedures; 4) to add a new cohort of 100 aviators with the same age-range, emphasizing recruitment of additional pilots in the 50-60 year age range. Our ultimate goal is to predict change in aviator performance better than we can by using age alone.